STATE OF MICHIGAN
DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY
LANSING

GRETCHEN WHITMER
GOVERNOR

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VIA E-MAIL

TO: Governor Gretchen Whitmer
Senate Environmental Quality Committee Members
Senate Natural Resources Committee Members
House Natural Resources and Outdoor Recreation Committee Members

FROM: Liesl Eichler Clark, Director LEC

DATE: September 4, 2019

SUBJECT: Report on the Low-Level Radioactive Waste 2018 Survey

In accordance with Section 18a of the Low-Level Radioactive Waste Authority Act, 1987 PA 204, as amended, generators of low-level radioactive waste (LLRW) are required to report annually to the Department of Environment, Great Lakes, and Energy (EGLE), Low-Level Radioactive Waste Authority, certain information on the volume, type, and activity of the LLRW produced. This report is a summary of the information submitted by generators for waste generated in calendar year 2018.

SUMMARY:

Twenty-seven facilities reported that they generated waste requiring off-site disposal in 2018. Of the twenty-seven facilities that generated waste, fifteen of them disposed of waste off-site. The following tables summarize the waste generated and disposed in 2018.

Table 1: Waste Generated and Disposed by Facility Type

Type of Facility	Number of Reporting Facilities in 2018 Generator (Disposer)	Volume of LLRW Generated in 2018 (ft^3)	Volume of LLRW Disposed in 2018 (ft^3)
Utility	3 (3)	105,290	59,004
Academic	9 (5)	760	861
Industry	12 (6)	261	309
Medical	2 (0)	23	0
Government	1 (1)	5	15
TOTAL	27 (15)	106,339	60,188*

* The subtotal differs from the sum due to rounding.

Table 2: Waste Generated and Disposed by Waste Classification

Waste Class	Number of Reporting Facilities in 2018 Generator (Disposer)	Volume of LLRW Generated in 2018 (ft^3)	Volume of LLRW Disposed in 2018 (ft^3)
Class A	27 (15)	105,746	59,958
Class B	2 (1)	359	5
Class C	3 (1)	233	225

In 2018 all waste-reporting facilities generated Class A waste, while all Class B and Class C waste was generated by utility companies. Disposing of LLRW at off-site facilities in 2018 represented 55 percent of generators; the other 45 percent have put their waste in secure storage to await disposal in the future. All LLRW disposal takes place outside of the state of Michigan.

CHALLENGES:

Facilities were asked what challenges they were facing in disposing of LLRW. The most common answer was the high cost of disposal. One academic facility reported that the cost to dispose of less than 20 pounds of contaminated material with trace amounts of mercury and tritium was $30,000, 72 percent of their annual disposal budget.

The cost is largely due to the limited number of disposal facilities. There are four LLRW disposal facilities in the country, only two of which will accept waste from Michigan. These facilities are in Clive, Utah, and Andrews, Texas.

HISTORICAL TRENDS:

Figures 1 through 3 show the changes in disposal of LLRW over time.

Figure 1: Volume of LLRW Disposed per Year

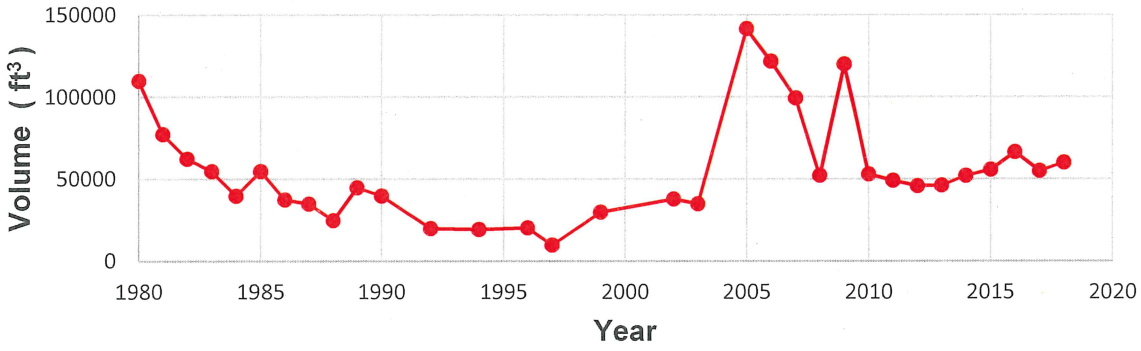
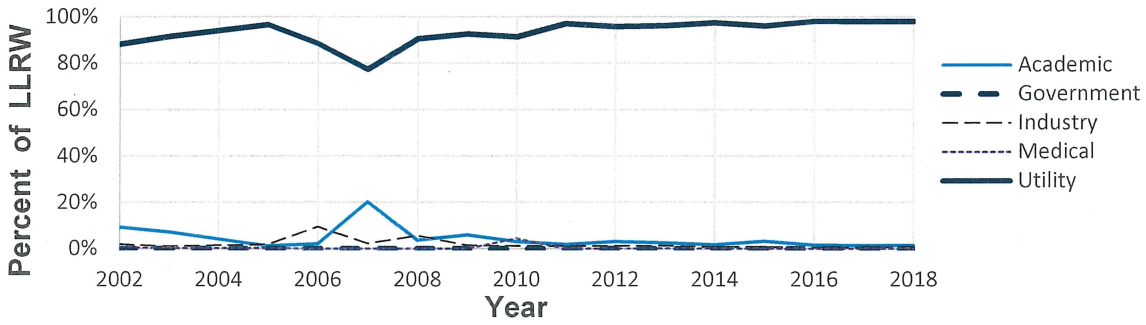


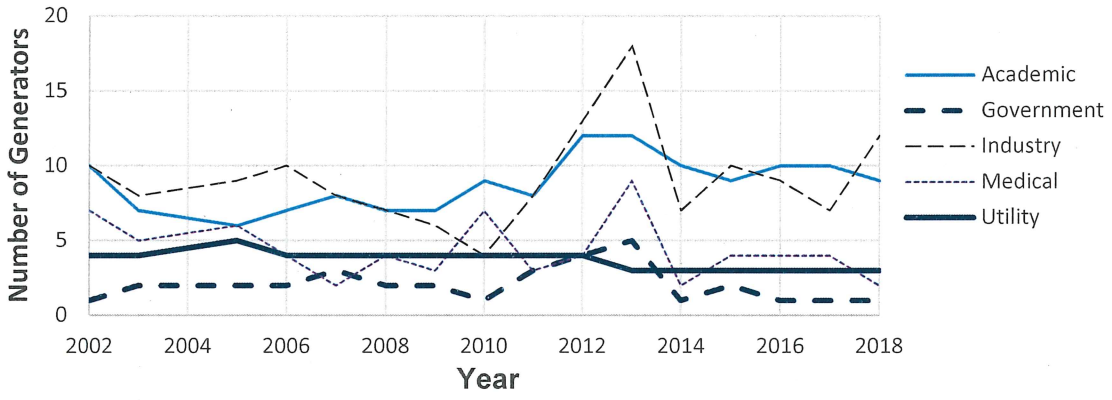
Figure 1 shows the annual volume of LLRW disposed since 1980. The spikes in LLRW disposal are from the decommissioning activities at Consumers Energy's Big Rock Point Nuclear Power Plant from 2005 to 2007 and DTE Energy's Enrico Fermi Nuclear Generating Station, Unit 1, in 2009. The primary generators of LLRW are utilities that operate nuclear power plants.

Figure 2: Percentage of LLRW Disposed by Facility Type



As shown in Figure 2, utilities have accounted for greater than 90 percent of the volume disposed in 15 of the last 16 years. The remainder is from facilities that routinely dispose of small amounts of waste and facilities needing a one-time disposal. The academic spike in 2007 was due to the decommissioning of the University of Michigan's Ford Reactor.

Figure 3: Number of Generators by Facility Type



LLRW is categorized by Classes A, B, and C as defined in Title 10 of the Code of Federal Regulations, Part 61, Subsection 61.55. The classification of LLRW is dependent upon the waste's isotopic composition and abundance, as well as the waste's chemical and physical stability. Class A waste is usually segregated from other waste classes at the disposal site. Class B waste is subjected to stricter requirements on waste packaging to ensure stability after disposal. Class C waste must not only meet more rigorous requirements on waste packaging to ensure stability, but also requires additional measures at the disposal facility to protect against inadvertent intrusion.

If you need further information, please contact Mike Neller, Manager, Radiological Protection Section, Materials Management Division, at 517-512-5859; or you may contact me at 517-284-6708.

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